

REMARKS

[001] The Office Action cites the following art: U.S. Patent Number 6,584,465 to *Zhu, et al* (hereinafter *Zhu*) and U.S. Patent Number 4,815,005 to *Oyanagi, et al* (hereinafter *Oyanagi*).

[002] Claims 1-5, 8-17, and 20-22 are pending in the case. Claims 1, 12, and 13 are independent claims. Claims 1-5, 8-17, and 20-22 are rejected under 35 USC § 103(a) as unpatentable over the combination of *Zhu* and *Oyanagi*.

[003] The Applicants submit the following remarks and respectfully request that the rejections be withdrawn and that the Claims be allowed.

REJECTION OF CLAIMS 1-5, 8-17, AND 20-22 UNDER 35 USC § 103(a)

[004] Claims 1-5, 8-17, and 20-22 are rejected under 35 USC § 103(a) as unpatentable over the combination of *Zhu* and *Oyanagi*.

[005] To establish a *prima facie* case of obviousness, the combination of prior art references must teach or suggest all the claim limitations. MPEP §2142. In addition, “it is insufficient that the prior art disclose[] the components of the patented device, either separately or used in other combinations; there must be some teaching, suggestion, or incentive to make the combination made by the inventor.” *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 934 (Fed. Cir. 1990). Finally, the cited art must be analogous, coming from the same field of endeavor as that into which the applicant ventured. MPEP §2141.01(a).

[006] Applicants submit that 1) the new *Zhu* reference is non-analogous art, that 2) it would not have been obvious to combine *Zhu* with *Oyanagi*, and that 3) the combination of *Zhu* and *Oyanagi* does not teach all of the elements of the present invention.

[007] It may be helpful to give a brief synopsis of the present invention as recited in Claim 1 along with synopsis of the cited prior art:

CLAIM 1

[008] Claim 1 recites:

1. A computer implemented method for identifying objects referenced in a stream of text, the method comprising:
 receiving an incoming stream of text;
 tokenizing the stream of text into individual words;
 constructing word patterns of one or more consecutive words from the stream of text;
 consulting a semantic network to automatically find a match between one or more word patterns in the incoming stream of text and a word pattern in the semantic network, such that each word in the incoming stream is searched once in the semantic network; and
 referencing a known object within the semantic network based on an identified word pattern from the stream of text, the known object identified by a word pattern of the semantic network.

[009] Thus, Claim 1 is directed to a method for identifying objects or words in a stream of text. The Claim requires the use of a semantic network. The method receives a stream or series of words or objects that are parsed into individual words. As words are received, word patterns are constructed. Tokenized words are compared to patterns in the semantic network. However, each new word is compared to the semantic network only one time. Normally, semantic networks do not work with patterns. In those instances where patterns may be used, a single word is compared to the semantic network multiple times. In this case, “each word in the incoming stream is searched once in the semantic network.”

[010] The new art cited by the examiner, *Zhu*, was not referenced in prior office actions. *Zhu* teaches the retrieval of digital patterns of images. Image files are stored in a database. Patterns are selected from the database based on matching patterns. *Zhu* teaches a method of

pattern matching that requires “... identification and retrieval of the set of patterns similar to a selected pattern, and at least initially irrespective of color.” *Zhu* col. 3, ll. 11-14. Thus, *Zhu* teaches a method of selecting matching images from an image database according to a selected image. The pattern matching may allow a first fabric pattern with a first color scheme to be matched with a second fabric pattern with a second color scheme. *Zhu* col. 3, ll. 1-14. The use of the terms “color invariant” or “invariant to color changes” indicate that the patterns may be matched even if the color schemes are different and the first and second fabric patterns match. *Zhu* teaches the use of computer databases for storing and retrieving patterns.

[011] The second reference, *Oyanagi* was listed in a prior Office Action in conjunction with §102 reference against Claim 1. *Oyanagi* is a patent filed in 1987. *Oyanagi* teaches the traditional hardware intensive implementation of a semantic network. Dedicated memory lines connecting a main associative memory to a sub-associative “is-a” memory allow direct electronic queries of a hard-wired semantic network. *Oyanagi* Abstract, Fig. 1. Queries into the electronic hard-wired semantic network require strict inputs, with a first input and a third input comprising nouns and a second input comprising a relationship verb such as “is-a” or “owns.” *Oyanagi* Abstract, Fig. 3.

Zhu Is Non-analogous Art

[012] The *Zhu* reference is non-analogous art and thus is not a valid reference to cite for a §103 obviousness rejection.

[013] Determining that a cited reference is non-analogous requires a two-step process. *in re Deminski*, 796 F.2d 436, 230 (Fed. Cir. 1986). First, is the reference within the inventor’s field of endeavor? If so, then the reference is analogous. If the reference is not within the

inventor's field of endeavor, is the reference reasonably pertinent to the particular problem with which the inventor was involved? See *In re Deminski* (Fed. Cir. 1986); MPEP 2141.01(a).

[014] The first question, whether the reference is in the inventor's field of endeavor is narrow in scope. It is not sufficient that the reference and the claimed invention are both in the computer science art as demonstrated by *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858 (Fed. Cir. 1993). The *Wang* decision is cited in great detail at MPEP 2141.01(a) –

ANALOGY IN THE ELECTRICAL ARTS:

Patent claims were directed to single in-line memory modules (SIMMs) for installation on a printed circuit motherboard for use in personal computers. Reference to a SIMM for an industrial controller was not necessarily in the same field of endeavor as the claimed subject matter merely because it related to memories. Reference was found to be in a different field of endeavor because it involved memory circuits in which modules of varying sizes may be added or replaced, whereas the claimed invention involved compact modular memories. Furthermore, since memory modules of the claims at issue were intended for personal computers and used dynamic random-access-memories, whereas reference SIMM was developed for use in large industrial machine controllers and only taught the use of static random-access-memories or read-only-memories, the finding that the reference was nonanalogous was supported by substantial evidence. MPEP 2141.01(a)

[015] Thus, a reference to a memory module was found to not be in the field of endeavor for an invention relating to SIMMs for installation on a printed circuit motherboard. The fact that the claimed inventions were for personal computers rather than industrial computers and for random access memory rather than static memory were sufficient distinctions to remove the claimed invention from the same field of endeavor as the cited reference.

[016] With respect to the present invention, Claim 1 recites a method for tokenizing a stream of text into words and comparing the tokenized words with a semantic network. This field of endeavor is distinct from the *Zhu* reference which relates to matching image patterns such as tile, fabric, and the like. The mere fact that the word “pattern” appears in both the cited

reference and Claim 1 is not sufficient to establish the same field of endeavor. This is supported by the MPEP's citation to *Wang* which teaches that two references that both relate to computer memory are not necessarily analogous simply because both references use the term "memory." MPEP 2141.02(a).

[017] The second part of the two-part test for analogous art requires that the cited reference be reasonably pertinent to the particular problem with which the inventor was involved. "A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992). To answer this question, *Wang* requires that the purpose of the reference and the claimed invention be compared.

[018] *Zhu* explicitly states the problem faced and addressed by Zhu et al is as follows:

What is needed, since color and texture properties of different versions of the same patterns usually vary, is a system that can be employed to identify and retrieve similar patterns irrespective of color variations. *Zhu* col. 2, ll. 37-40.

[019] The cited reference seeks to solve a problem related to image pattern matching. In contrast, the present application as recited in Claim 1 and in its specification, seeks to identify word patterns in a stream of text using a semantic network as a tool for identifying the word patterns. *Simpson*, ¶8. The problems are completely different. The image pattern matching does not commend itself to the mind of an inventor trying to tokenize a text stream into groups of words or phrases. Under *Wang*, the fact that the two references examined both dealt with computer memory was not sufficient to find that the references were analogous art. Thus, *Zhu* is not analogous art and is an improper 35 USC §103(a) reference.

Zhu and Oyanagi Do Not Teach The Elements of Claim 1

[020] The Office Action starting at §4 on page 2 suggests various elements from *Zhu* that relate to various elements of Claim 1. The references and connections between the elements of Claim 1 and the cited references in *Zhu* are vague and do not directly relate to the elements of Claim 1. The MPEP requires that “Deficiencies [in the Claims] should be explained clearly, particularly when they serve as a basis for a rejection. Whenever practicable, Office personnel should indicate how rejections may be overcome and how problems may be resolved. A failure to follow this approach can lead to unnecessary delays in the prosecution of the application.” MPEP §2106. The present Office Action does not clearly explain deficiencies or provide any indication of how rejections may be overcome. This Office Action simply cites new art that is non-analogous in nature requiring further time and expense from Applicants. Regardless, Applicants will attempt to respond to the elements of the Office Action.

[021] On page 3, the Office Action states, “The “stream of text” is equivalent to the “query” in Figure 4 of *Zhu*. The stream of text referred to in Claim 1 comprises a series of objects or tokens that are to be tokenized into words or objects. The stream of text is the input that the method of Claim 1 tokenizes and processes according to matches in the semantic network.

[022] In contrast, the query of Figure 4 is an image pattern which will be used to search an image database as described at *Zhu* col. 8, ll. 12-23. The “query pattern” as described in lines 12-23 of column 8 is a “query pattern representation.” In *Zhu*, the query pattern representation patterns correspond to digital images, not to words or word patterns. :

The subject matter of the present invention relates to digital image understanding technology, which is understood to mean technology that digitally processes a digital image to recognize and thereby assign useful meaning to human understandable objects,

attributes or conditions and then to utilize the results obtained in the further processing of the digital image. *Zhu* col. 4, ll. 9-15.

[023] In the present invention, the tokenized words are matched against word patterns in a semantic network. Claim 1. Claim 1 is directed to text while the query cited refers to digital images. The two elements are not equivalent.

[024] The office action on page 3 equates tokenizing the stream of text into individual words from Claim 1 to the “generating” all the keys in the query, referring to *Zhu* Figure 4, query element, *Zhu* Fig. 5, element 130, col. 8, ll. 12-15, 27-29.

[025] Again, the query of Figure 4 refers to a digital image pattern, not to individual words. Equating images with words is improper. These elements are not equivalent. The cited reference to lines 27-29 refers to pattern identification. The pattern described throughout *Zhu* is image patterns. See the previously cited reference at *Zhu* col. 4, ll. 9-15 and *Zhu* abstract. An image pattern and a individual words are not equivalent.

[026] The references from Claim 1 related to “Constructing word patterns of one or more consecutive words from the stream of text” similarly is not equivalent to the image patterns cited in Figure 4 and Figure 5.

[027] “Consulting a semantic network ...” is not equivalent to the image pattern matching described at *Zhu* Fig. 5, element 132.

[028] A semantic network is not a “database” as taught in *Zhu*. A semantic network is an organization of nouns and container relationships. A database as taught in *Zhu* is a compilation of image patterns or image pattern keys. The two are not equivalent. Images and image patterns are not equivalent to words.

[029] The remaining citations rely on further invalid equivalences of words and digital images. Applicants submit that images and words are not equivalent.

[030] The Office Action fails to cite equivalent structures for each element of Claim 1. The Office Action equates words with digital images. Such comparison is invalid.

[031] The Office Action bases an obviousness rejection of Claim 1 on citations to non-analogous art. Claim 1 is valid because *Zhu* is non-analogous.

[032] Even if *Zhu* were analogous, which it is not, the cited references from *Zhu* are invalid as they make invalid comparison assertions. Claim 1 is valid as the elements of Claim 1 are not taught by the cited references.

Claims 2-5, 8-17, 20-22

[033] Applicants submit that independent Claims 12 and 13 cover substantially the same subject matter as Claim 1 discussed above and are allowable for the same reasons cited above with respect to Claim 1. Furthermore, Applicants submit that since dependent Claims 2-5, 8-11, 14-17, and 20-22, which were also rejected under 35 USC §103(a) in view of *Zhu* and *Oyanagi*, are non-obvious and allowable as depending from otherwise allowable claims.

CONCLUSION

[034] In view of the foregoing, Applicants submit that the application is in condition for allowance. In the event any questions or issues remain that can be resolved with a phone call, Applicants respectfully request that the Examiner initiate a telephone conference with the undersigned.

Respectfully submitted,

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